

# **ARMY EXPLOSIVES SAFETY SUBMISSIONS FOR CLEANUP AND RELEASE OF REAL PROPERTY WHICH CONTAINS ORDNANCE AND EXPLOSIVES**

Cliff Doyle

U.S. Army Technical Center for Explosives Safety (USATCES)

Savanna, Illinois 61074-9639

(815) 273-8741, fax 8731 or 8769

email cdoyle@savanna-emh1.army.mil

## **ABSTRACT**

The Army is disposing of real property due to BRAC and normal property excessing. The Army manufactured, stored, fired, and disposed of ammunition on some of this property. In many cases, OE remains as a result. Before it releases the property, the Army will address OE consistent with how the property will be reused. However, the Army cannot proceed until its safety experts and the Department of Defense Explosives Safety Board (DDESB) approve an explosives safety submission. This article tells when to prepare a submission and when it must be approved. It also explains who approves them and what they should contain. This article concludes by giving lessons learned from past submissions.

## **DEFINITIONS**

**Active installations:** Active installations are defined as installations still under the custody and control of the Army. They include operating installations, installations in a standby or layaway status, and installations awaiting closure due to BRAC or any other reason. Examples include but are not limited to posts, camps (including National Guard camps), forts, depots, activities, ports, ammunition supply points, basic load ammunition storage areas and ammunition plants.

**Anomaly review board:** A technical group established to provide technical guidance and quality assurance oversight of the review and resolution of geophysical information related to unresolved anomalies at a site.

**Chemical agent:** A chemical substance that is intended for use in military operations to kill, seriously injure, or incapacitate a person through its physiological effects. Excluded from consideration are chemicals used by industry, riot control agents (such as tear gas), chemical herbicides, smoke (such as white phosphorous), and flame (such as napalm).

**Chemical warfare material:** Chemical agents; or military munitions containing chemical agents.

Ordnance and explosives (OE) - OE consists of either of the following:

First, OE includes live ammunition, live ammunition components, chemical warfare material, or explosives that have been lost, discarded, buried, fired, or expelled from demolition pits or burning pads. Such material is no longer under accountable record control of any DOD organization.

Second, OE includes soil mixed with a sufficient amount of an explosive such that the soil presents explosion hazards. The concentration of a particular explosive in soil necessary to present an explosion hazard depends on whether the particular explosive is classed as "primary" or "secondary".

Secondary explosives are bursting and boosting explosives; ie, they are used as the main bursting charge or as the booster which sets off the main bursting charge. Secondary explosives are much less sensitive than primary explosives; in other words, they are much less likely to react if struck. Primary explosives are those extremely sensitive explosives (or mixtures thereof) which are used in primers, detonators, and blasting caps. Guidance on whether a particular explosive is classified as primary or secondary is available from the author.

Soil containing 10 percent or more by weight of secondary explosives presents explosion hazards. Such soil is OE. For primary explosives, no level has been established. However, the Army Environmental Center is establishing a level. In the meantime, soils with primary explosives must be sampled and tested to determine if they present explosion hazards. Guidance on soil sampling and testing is available from the U.S. Army Environmental Center, Mr. Wayne Sisk, (410) 612-6851.

**Formerly used defense sites (FUDs):** Formerly active DOD or War Department installations (or portions thereof) that have been released outside DOD custody and control.

**On-site:** The area containing OE and all areas in close proximity to the OE that are necessary to implement the OE

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE <b>AUG 1996</b>		2. REPORT TYPE		3. DATES COVERED <b>00-00-1996 to 00-00-1996</b>	
4. TITLE AND SUBTITLE <b>Army Explosives Safety Submissions for Cleanup and Release of Real Property Which Contains Ordnance and Explosives</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>U.S. Army Technical Center for Explosives Safety (USATCES),Savanna,IL,61074-9639</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release; distribution unlimited</b>					
13. SUPPLEMENTARY NOTES <b>See also ADM000767. Proceedings of the Twenty-Seventh DoD Explosives Safety Seminar Held in Las Vegas, NV on 22-26 August 1996.</b>					
14. ABSTRACT <b>see report</b>					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>Same as Report "SAR"</b>	18. NUMBER OF PAGES <b>4</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			

removal.

**Real property:** Real property consists of land, buildings, and water bodies. Real property may contain OE as the result of manufacturing, weapons firing, training, demolition ground operations, disposal, loss, abandonment, or waste collection. Examples of such property include pads, pits, basins, ponds, streams, impact areas, maneuver areas, training areas, burial sites, and buildings used for ammunition or explosives operations.

**Recovered chemical warfare material (RCWM).** Chemical warfare material and/or associated equipment that was previously disposed of as waste, and surrounding contaminated media, that was discovered either by chance or during real estate recovery/restoration operations.

**Response action.** The process of reducing risk of public exposure resulting from military ordnance and explosives. Actions may include detecting OE and either eliminating its explosive properties on site or transporting it off site to a storage or demilitarization facility, isolation of the hazard, or other action necessary to protect the public.

**Stakeholder:** Federal, state, and local officials, community organizations, property owners and others having a personal or emotional interest, involvement or share or having a monetary or commercial involvement in the property to undergo an OE response action.

#### WHEN IS A SUBMISSION TO DDESB REQUIRED?

The Army provides DDESB a submission when there is a plan to release active installation property outside DOD, and the property contains OE which must be addressed consistent with the reuse of the property.

#### WHEN IS A SUBMISSION TO DDESB NOT REQUIRED?

There are four cases...

Not required for emergency responses by military explosives ordnance disposal (EOD) or Technical Escort Unit (TEU). EOD is the military's version of a "bomb squad". TEU is also a military "bomb squad", only TEU specializes in handling chemical warfare material.

Not required for emergency or time critical actions taken to abate an immediate, extremely high explosives hazard. Example: an area that contains hazardous munitions on the ground surface is discovered. The area is open to personnel. Immediate action must be taken to deny access and/or remove the munitions.

Not required for normal maintenance operations conducted on active ranges, such as sweeping a range for duds after a weapons firing exercise.

Not required for formerly used defense sites (FUDS). Please note that the previous three cases do not require a safety submission of any kind. However, a FUDS does require a submission. A FUDS submission contains has about the same information as submissions for property releases. However, FUDS submissions go to HQDA for approval, not DDESB. For more information on FUDS submissions, contact the author.

#### WHEN MUST THE SUBMISSION BE APPROVED?

DDESB must approve the submission before the OE removal starts. However, intrusive sampling is permitted prior to approval. Intrusive sampling consists of sweeping sample plots of land with metal detectors and digging up magnetic "hits" (called "anomalies") to determine if they are OE or just inert metal. Intrusive sampling helps estimate the types and amounts of OE expected at a site. This is useful information in a submission.

#### WHERE IS THE SUBMISSION ROUTED?

The installation prepares the submission and sends three copies to its higher headquarters (in Army parlance, to its "Major Command" [MACOM] safety office).

The MACOM safety office endorses the submission and sends two copies to the U.S. Army Technical Center for Explosives Safety (USATCES).

The USATCES Army-approves the submission and sends one copy to the Department of Defense Explosives Safety Board (DDESB).

The DDESB approves the submission.

The Corps of Engineers is also involved in the preparation and review of the submission. For more details, contact the author.

#### WHAT SHOULD A SUBMISSION CONTAIN?

Provide an explanation of why OE exists on the site. Describe what types of OE are known or suspected to exist on the site. For example, the site may have been an impact area for 105mm and 155mm high explosive artillery projectiles. In most cases, studies already exist which provide this information. There are many different kinds of studies. Some of their names are Inventory Project Reports, Preliminary

Assessments (PAs), Historical Records Searches (HRSS), Archives Search Reports (ASRs), Safety Surveys, and Engineering Evaluations/Cost Analyses.

Include a map showing the things listed below.

The map must show the boundaries of the area(s) known or suspected to contain OE.

The map must show the boundaries of the parcels of land to be released. In a typical base closure, the Army releases different parcels to different parties. Federal, state, and local agencies may get their own parcels. Private parties may get their own. Explain who will get each parcel and what they plan to use it for. There are many possible uses. Try to fit the use into one of these categories: residential construction, commercial construction, recreational construction, surface recreation, agriculture, vehicle parking, surface supply storage, livestock grazing, wildlife preserve.

The map or accompanying text should show how the OE will be addressed in each parcel. In most cases, a removal is planned. The removal depth is related to the future use of the property. For example, it would not be safe to remove OE to a depth of only one foot on property to be released for construction of an amusement park. For more information on removal depths and land reuse, contact the author.

For areas containing explosives-contaminated soil, provide a separate map showing the location of sampling points. Identify the concentration of explosives for each sampling point. Describe the screening method used to determine explosive concentration.

If magazines are to be used to store recovered OE or demolition materials, show the magazine location and NEW limit for each magazine.

If recovered OE will be transported to an on-site demolition range for destruction, show the location of the range on the map.

In addition to maps, provide the rest of the information below. Tell when the OE removal will begin.

State the depth of the frost line for the area. Where OE is above the frost line yet located below the removal depth, describe what provisions will be made for continued surveillance of the area (frost heave will push OE upward).

Describe the techniques to be used to detect, recover, and destroy OE. These techniques can be (but don't have to be) described by using excerpts from the work plan for the OE

removal. If the work plan has not yet been finalized, a draft is acceptable. Any changes subsequently made to the draft that change the information in the explosives safety submission will be submitted for approval through the same channels as the submission.

State whether an Anomaly Review Board will be established for the OE removal.

If the onsite method to destroy UXO is something other than detonation (examples: bioremediation, incineration, etc.), then provide a brief description of the method.

Describe methods to be used to deny unrelated personnel access to areas hazarded by OE recovery and destruction operations. This hazarded area is called the "exclusion area".

If recovered OE cannot be destroyed on site and must be transported off site, indicate the transportation, storage, and disposition plans.

Summarize explosives ordnance disposal (EOD) or contractor support. If available, furnish resumes of the contractor's key supervisory personnel (the Army hires a contractor to do the actual OE removal).

Summarize any land use restrictions to be placed on the property. Land use restrictions are needed when the removal depth is less than the OE depth.

For chemical warfare material removal projects, provide details of the selected chemical protective clothing and equipment, air monitoring plan, maximum credible event, downwind hazard modeling, medical support plans, Technical Escort Unit Operating plans, etc.

Provide details of the public planning document(s) that ensure involvement of public and local officials where there is a risk to the public as a result of the removal action.

## LESSONS LEARNED ON SUBMISSIONS

Submissions are slow moving beasts, and take a lot of care and feeding. It typically takes 3 months to prepare a submission and another three to get it approved. There are ways to speed up the process...

Get the key players together early - the preparer, the installation BRAC and safety offices; the MACOM BRAC and safety offices; the U.S. Army Engineering and Support Center, Huntsville (USAESCH) and the USATCES.

All parties in the Army review chain should review drafts of

the submission.

Send the official submission to the MACOM, the USAESCH, and the USATCES simultaneously. This is faster than a sequential review.